

EA



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,197	12/03/2003	R. Bharat Rao	2002P19745US01	4681

7590 09/21/2005

Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, NJ 08830

EXAMINER

FRENEL, VANEL

ART UNIT	PAPER NUMBER
----------	--------------

3626

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/727,197

Applicant(s)

RAO ET AL.

Examiner

Vanel Frenel

Art Unit

3626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/09/05 has been entered.

### **Notice to Applicant**

2. This communication is in response to Amendment filed on 06/09/05. Claims 1 and 39 have been amended. Claims 43-51 have been added. Claims 1-51 are pending.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows.

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of title.

4. Claims 25-51 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

(1) whether the invention is within the technological arts, and

(2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

In the present case, claim 25 recites an abstract idea. The recited steps of a knowledge base comprising domain-specific criteria does not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

In the present case, the claimed invention produces patient information from structured and unstructured data sources (i.e., repeatable) by analyzing the patient information in the medical record using domain-specific criteria (i.e., useful and tangible).

As to technology arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory

subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble.

In this present case, claim 39 recites "a program storage device readable by a machine, tangibly embodying a program of instructions executable on the machine to perform method steps for processing medical information, the instructions comprising the steps of" in its preamble but does not recite any technological device in the body of the claim in performing the various steps of "processing" within the computer system. However, a technological device in the preamble of a claim has no patentable weight.

Although the recited process produces a useful, concrete, and tangible result, since the claimed invention, as a whole, is not within the technological art as explained above, claims 25 and 38 are deemed to be directed to non-statutory subject matter.

Therefore, the rejection based under 35 U.S.C 101 is hereby sustained.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans (6,347,329) in view of (Managed Care: New Financial/ Practice Strategies to Manage More Efficient /Effectively in a Primary Care Setting by Virginia Smith Harvin; 1998).

(A) As per claim 1, Evans discloses a method for processing medical information, comprising the steps of:

obtaining a medical record of a patient (Col.1, lines 36-58), wherein the medical record comprises patient information from one or more structured and unstructured data sources (Col.8, lines 34-65);

Evans does not explicitly disclose analyzing with a computer the patient information from at least the unstructured data source in the medical record using domain-specific criteria; and automatically extracting billing information from the medical record as part of the analysis.

However, these features are known in the art, as evidenced by Virginia. In particular, Virginia suggests that the method having analyzing with a computer the patient information from at least the unstructured data source in the medical record using domain-specific criteria (See Virginia, Page 4, Paragraphs 3-4); and automatically extracting billing information from the medical record as part of the analysis (See Virginia, Page 4, Paragraphs 3-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have included the feature of Virginia within the system of Evans with the motivation of providing quality care, increase revenue, reduce cost, and minimize the risk (See Virginia, Page 2, Paragraph 1).

(B) As per claim 2, Virginia discloses the method wherein extracting billing information comprises extracting one or more billing codes (Page 2, Paragraph 13).

(C) As per claim 3, Evans discloses the method wherein the billing codes comprise a diagnosis code, a procedure code or both (Col.9, lines 9-14).

(D) As per claim 4, Virginia discloses the method wherein the patient information comprises clinical information and financial information of the patient (Page 1 , Paragraphs 1-5).

(E) As per claim 5, Virginia discloses the method wherein extracting billing information comprises extracting all billing codes that are supported by the patient information based on all domain-specific criteria in a domain knowledge base (See Virginia, Page 4, Paragraphs 3-4).

(F) As per claim 6, Virginia discloses the method wherein the domain-specific criteria comprises institution-specific domain knowledge (The Examiner interprets primary care facilities to be a form of institution-specific domain knowledge See Virginia, Page 2, Paragraph 1).

(G) As per claim 7, Virginia discloses the method wherein the institution-specific domain knowledge relates to one or more of data at a hospital, document structures at a hospital, policies of a hospital, guidelines of a hospital, and variations at a hospital (See Virginia, Page 2, Paragraph 7).

(H) As per claim 8, Evans discloses the method wherein the domain-specific criteria includes condition-specific or disease-specific domain knowledge (Col.7, lines 1-9).

(I) As per claim 9, Evans discloses the method wherein the condition-specific or disease-specific domain knowledge includes one or more of factors that influences risk of a condition or disease, disease progression information, complications information, outcomes and variables related to a condition or disease, measurements related to a condition or disease, and policies and guidelines established by medical bodies (Col.14, lines 45-67).

(J) As per claim 10, Evans discloses the method further comprising generating an explanation that includes one or more pointers to relevant patient information, relevant domain-specific criteria, or relevant patient information and domain-specific criteria, which supports the extracted billing information (Col.8, lines 34-65).

(K) As per claim 11, Virginia discloses the method further comprising presenting the explanation to a user for verifying the billing information (Page 4, Paragraphs 3- 4).

(L) As per claim 12, Virginia discloses the method further comprising automatically generating a medical claim for the patient using the extracted billing information (Page 4, Paragraphs 3-7).



(M) As per claim 13, Virginia discloses the method further comprising: presenting the extracted billing information to the user for verification (Page 4, Paragraphs 1-7), and automatically generating a medical claim for the patient using the extracted billing information, if the extracted billing information is verified by the user (Page 4, Paragraphs 1-7).

(N) As per claim 14, Virginia discloses the method further comprising: modifying the extracted billing information in response to user input, if the billing information is not verified by the user (Page 4, Paragraphs 1-7)\*, and automatically generating a medical claim for the patient using the modified extracted billing information (Page 4, Paragraphs 1-7).

(O) As per claim 15, Virginia discloses the method further comprising automatically updating the medical record of the patient using the extracted billing information (Page 5, Paragraphs 1-8).

(P) As per claim 16, Virginia discloses the method wherein automatically updating the medical record comprises using the extracted billing information to (i) correct billing information in the medical record, which is determined to be incorrectly recorded in the medical record or (ii) insert billing information into the medical record, which is determined to be missing from the medical record (Page 5, Paragraphs 1-8).

(Q) As per claim 17, Virginia discloses the method further comprising presenting an updated medical record to a user for verification, wherein automatically updating the medical record of the patient is performed in the updated medical record is verified by the user (Page 5, Paragraphs 1-8).

(R) As per claim 18, Virginia discloses the method further comprising: (a) automatically assessing the quality of the patient information of the medical record using the extracted billing information to obtain quality assessment results (Page 5, Paragraphs 1-8)., and (b) storing the quality assessment results for the medical record (Page 5, Paragraphs 1-8).

(S) As per claim 19, Virginia discloses the method further comprising performing steps (a) and (b) for a plurality of medical records in an electronic database (Page 5, Paragraphs 1-10)', and automatically generating quality assurance statistics based on the quality assessment results obtained for the plurality of medical records (Page 4, Paragraphs 6-11).

(T) As per claim 20, Virginia discloses the method wherein the quality assessment results comprise information regarding occurrences of correct, incorrect and/or missing billing codes in the medical record (Page 1, Paragraphs 7-10, Page 2, Paragraphs 13 to Page 3, Paragraphs 1-11).

(U) As per claim 21, Virginia discloses the method further comprising automatically determining an expected amount of medical billing reimbursement based on the extracted billing information (Page 2, Paragraph 1-7, Page 4, Paragraphs 1-4).

(V) As per claim 22, Virginia discloses the method further comprising: maintaining the expected amount in the medical record (Page 4, Paragraphs 2-7)., and reconciling the expected amount with an actual reimbursement received (Page 4, Paragraphs 7-11 ; Page 5, Paragraphs 1-8).

(W) As per claim 23, Virginia discloses the method wherein determining an expected amount of medical billing reimbursement further depends on whether or not clinical guidelines have been followed as specified by domain-specific criteria (Page 4, Paragraphs 7-11, Page 5, Paragraphs 1-8).

(X) As per claim 24, Virginia discloses the method wherein the explanation further comprises information as to whether or not clinical guidelines have been followed as specified by domain-specific criteria (Page 4, Paragraphs 7-11 ; Page 5, Paragraphs 1-8).

7. Claims 25-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans (6,347,329) in view of (Managed Care: New Financial/ Practices Strategies to Manage More Efficient /Effectively in a Primary Care Setting by Virginia Smith Harvin; 1998), as applied to claims 1-24 above, and further in view of (iMedica Creates the Most Comprehensive Charting Solution Harnessing the Power Of the Internet Wirelessly by PR Newswire, N.Y Jan.18, 2000).

(Y) As per claim 25, Evans discloses a system for processing medical information (See Evans, Col.1, lines 36-58) comprising: patient information from structured and unstructured data sources, by analyzing the patient information from at least the unstructured data source using domain-specific criteria (See Evans, Col.8, lines 34-67), and an engine of a device that automatically extracts billing information from a medical record (See Virginia, Page 4, Paragraphs 3-4).

The combination of Evans and Virginia do not explicitly disclose a knowledge base comprising domain-specific criteria.

However, this feature is known in the art, as evidenced by PR Newswire. In particular, PR Newswire suggests a knowledge base comprising domain-specific criteria (See PR Newswire, Page 2, Paragraphs 2-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have included the features of PR Newswire within the collective teachings of Evans and Virginia with the motivation of providing a comprehensive, rapid charting solution that enables physicians to accurately chart in a fraction of time and access

Art Unit: 3626

patient records on a secure Internet connection anytime, anywhere (See PR Newswire, Page 1, Paragraph 4).

(Z) As per claim 26, Virginia discloses the system wherein the engine extracts billing information comprising billing codes (Page 2, Paragraph 13).

(M) As per claim 27, Evans discloses the system wherein the billing codes comprise diagnosis codes, procedure codes, or both (Col.9, lines 9-14).

(BB) As per claim 28, Virginia discloses the system wherein the engine generates an explanation that includes one or more pointers to relevant patient information, relevant domain-specific criteria, or relevant patient information and domain-specific criteria, which supports the extracted billing information (Col.8, lines 34-65).

(CC) As per claim 29, Virginia discloses the system further comprising a user interface for presenting the explanation to a user to enable the user to verify the extracted billing information (Page 4, Paragraphs 3- 4).

(DD) As per claim 30, Virginia discloses the system further comprising an automated billing system that automatically generates a medical claim for the patient using the extracted billing information output from the engine (Page 4, Paragraphs 3-7).

(EE) As per claim 31, Virginia discloses the system further comprising a user interface that presents the extracted billing information to a user and enables a user to verify the extracted billing information and modify the extracted billing information before automatically generating a medical claim based on the verified or modified billing information (Page 2, Paragraphs 5-13 to Page 3, Paragraphs 1-11).

(FF) As per claim 32, Virginia discloses the system wherein the engine can automatically update the medical record of the patient using the extracted billing information (Page 5, Paragraphs 1-8).

(GG) As per claim 33, Virginia discloses the system, wherein the engine can automatically update the medical record by using the extracted billing information to (i) correct billing information in the medical record, which is determined to be incorrectly recorded in the medical record or (ii) insert billing information into the medical record, which is determined to be missing from the medical record (Page 5, Paragraphs 1-8).

(GG) As per claim 34, Virginia discloses the system further comprising a user interface that presents an updated medical record to a user and enables the user to verify the updated medical record before automatically updating the medical record of the patient (Page 5, Paragraphs 1-8).

(HH) As per claim 35, Virginia discloses the system wherein the engine can

automatically assess the quality of patient information for each of a plurality of medical records using extracted billing information from each of the medical records and automatically generate quality assurance statistics based on the quality assessment results obtained for the plurality of medical records (Page 4, Paragraphs 6-11).

(II) As per claim 36, Virginia discloses the system wherein the quality assessment results comprise information regarding occurrences of correct, incorrect and/or missing billing codes in the medical record (Page 1 , Paragraphs 7-10., Page 2, Paragraphs 13 to Page 3, Paragraphs 1-1 1).

(JJ) As per claim 37, Virginia discloses the system wherein the engine can automatically determine an expected amount of medical billing reimbursement based on the extracted billing information from the medical record and reconciles the expected amount with an actual reimbursement received (Page 1, Paragraphs 7-10', Page 2, Paragraphs 13 to Page 3, Paragraphs 1-11).

(KK) As per claim 38, Virginia discloses the system wherein the system operates as a service by a service provider for processing patient medical records in a database of a subscribing entity (Page 5, Paragraphs 1-10).

(LL) As per claim 39, Evans discloses obtaining a medical record of a patient (Col.1, lines 36-48), wherein the medical record comprises patient information from one or

more structured and unstructured data sources (See Evans, Col.8, lines 3435), and automatically extracting billing information from the medical record by analyzing the patient information in the medical record using domain-specific criteria (See Virginia, Page 4, Paragraphs 3-4).

Evans and Virginia do not collectively disclose a program storage device readable by a machine, tangibly embodying a program of instructions executable on the machine to perform method steps for processing medical information, the instructions comprising the steps of.

However, this feature is known in the art, as evidenced by PR Newswire. In particular, PR Newswire suggests a program storage device readable by a machine, tangibly embodying a program of instructions executable on the machine to perform method steps for processing medical information, the instructions comprising the steps of (See PR Newswire, Page 2, Paragraph 12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have included the features of PR Newswire within the collective teachings of Evans and Virginia with the motivation of providing a comprehensive, rapid charting solution that enables physicians to accurately chart in a fraction of time and access patient records on a secure Internet connection anytime, anywhere (See PR Newswire, Page 1, Paragraph 4).

(MM) As per claim 40, Virginia discloses the program storage device wherein the instructions for extracting billing information comprise instructions for extracting one or



more billing codes (Page 2, Paragraph 13).

(NN) As per claim 41, Virginia discloses the program storage device wherein the patient information comprises clinical information and financial information of the patient (Col.9, lines 9-14).

(OO) As per claim 42, PR Newswire discloses the program storage device wherein the instructions for extracting billing information comprise instructions for extracting all billing codes that are supported by the patient information based on all domain-specific criteria in a domain knowledge base (See PR Newswire, Page 2, Paragraphs 2-5).

(PP) As per claim 43, PR Newswire discloses the method wherein automatically extracting comprises inferring a diagnosis and the associated billing information from the medical record (See PR Newswire, Page 2; Paragraphs 4 to Page 3, Paragraph 4).

(QQ) As per claim 44, PR Newswire discloses the method wherein inferring the diagnosis and the associated billing information from the medical record without reference to diagnosis codes (See PR Newswire, Page 2; Paragraphs 4 to Page 3, Paragraph 4).

(RR) As per claim 45, Virginia discloses the system wherein inferring comprises determining a probability (See Virginia, Page 4, Paragraphs 5-9).

(SS) As per claim 46, Virginia discloses the system wherein the engine is operable to infer a diagnosis and the associated billing information from the medical record (See Virginia, Page 4, Paragraphs 2-4).

(TT) As per claim 47, PR Newswire discloses the system wherein inferring the engine is operable to infer a diagnosis and the associated billing information from the medical record without reference to diagnosis codes (See PR Newswire, Page 2, Paragraphs 4-12).

(UU) As per claim 48, Virginia discloses the system wherein the engine is operable to determine a probability associated with the inferred diagnosis (See Virginia, Page 4, Paragraphs 5-9).

(VV) As per claim 49, PR Newswire discloses the program storage device wherein automatically extracting comprises inferring a diagnosis and the associated billing information from the medical record (See PR Newswire, Page 2, Paragraphs 4-12).

(WW) As per claim 50, PR Newswire discloses the program storage device wherein inferring comprises the diagnosis and the associated billing information from the medical record without reference to diagnosis codes (See PR Newswire, Page 2, Paragraphs 4-12).

(XX) As per claim 51, Virginia discloses the program device wherein inferring comprises determining a probability (See Virginia, Page 4, Paragraphs 5-9).

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited but not applied art teaches automated system and method for providing real-time verification of health insurance eligibility (5,832,447), provider claim editing and settlement system (6,341,265), electronic creation, submission, adjudication, and payment of health insurance claims (6,343,271), disease management system and method including correlation assessment (6,770,029), system and method for managing patient medical records (5,772,585) and Lernout & Hauspie strengthens media offerings in Europe, acquires assets of CAMS (M2 Presswire, Coventry: Aug 31, 1999).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanel Frenel whose telephone number is 571-272-6769. The examiner can normally be reached on Monday-Thursday from 6:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on 571-272-6776.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Art Unit: 3626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pairedirect.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

V.F

V.F

September 7, 2005

  
JOSEPH THOMAS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3626